Remarks/Arguments:

The above Amendments and these Remarks are in reply to the Office Action mailed August 11, 2005.

Claims 1-41 were pending in the Application prior to the outstanding Office Action. In the Office Action, the Examiner rejected claims 1-41 and objected to claim 31.

Claim 31 is objected to due to informalities. In steps (b) and (c) of claim 31, "to he" changed to "to be".

Claims rejected under 35 U.S.C. 102(b) as being anticipated by Gehani et al., U.S. Patent No. 5,765,171.

Claim 1 as amended reads as follows:

> 1. A method for replicating data from a master server to a slave server over a network, the method comprising the steps of:
>
> sending a packet of information from the master server to the slave server, the information relating to a change in the data stored on the master server and containing a version number for the present state of the data, the packet of information including first updated information for the data;
>
> allowing the slave server to determine whether the data on the slave server has been updated to correspond to the version number contained in the packet; and
>
> requesting a delta be sent from the master server to the slave server if the data on the slave server does not correspond to the version number contained in the packet, the delta containing information needed to update the slave server.

Claim 1 has been amended to state that the packet of information includes first updated information for the data. This change has been made to distinguish from the Gehani reference in which version vector comparisons are done before a conventional update preparation technique. In the system of claim 1, as amended, the packet of information can contain sufficient information to allow the slave server to update the system with the first update information if the version numbers match as well as be sufficient to have the slave server request a delta if the system numbers do not match. Gehani does not show, suggest or give motivation for such a limitation. Claims 2-4 dependent upon claim 1 and for that reason are believed to be allowable.

Claims 5 is amended as follows:

> 5. A method for replicating data from a master server to a slave server over a network, the method comprising the steps of:
>
> sending a packet of information including a version number from the master server to the slave server, the version number relating to the present state

of the data stored on the master server, packet of information including first updated information for the data;

allowing the slave server to determine whether the slave server has been updated to reflect the present state of the data corresponding to the version number sent from the master server; and

requesting a delta be sent from the master server to the slave server if the slave server does not correspond to the version number sent by the master, the delta containing information needed to update the slave server.

For the reasons discussed above with respect to claim 1, claim 5 is believed to be allowable. Claims 6-13 are dependent upon claim 5 and for that reason and because of the additional limitations of these claims, these claims are believed to be allowable.

Claims 14, 19 20, 21, 38, 39, 40 and 41 read as follows:

14. A method for replicating data over a network including a master server and at least one slave server, the method comprising the steps of:

sending a packet of information from a master server to each slave server on the network, the information relating to a change in the data stored on the master server and containing a current version number for the present state of the data, the information further relating to previous changes in the data and a version number for each previous change;

allowing each slave server to determine whether the slave server has been updated to correspond to the current version number;

allowing each slave server to commit the information if the slave server has not missed a previous change; and

allowing each slave server having missed a previous change to request that previous change be sent from the master server to the slave server before the slave server commits the packet of information.

19. A method for replicating data over a network including a master server and at least one slave server, the method comprising the steps of:

sending a packet of information from a master server to each slave server on the network, the information relating to a change in the data stored on the master server and containing a prior version number for the prior state and a new version number for the new state of the data, the information further relating to previous changes in the data and a previous version number for each previous change;

allowing each slave server to determine whether the data on the slave server corresponds to the prior version number contained in the packet;

allowing each slave server to commit the packet of information if the data on the slave server corresponds to the prior version number contained in the packet, the commit also updating the version of the slave server to the new version number; and

allowing each slave server not corresponding to the prior version number to request that a delta be sent from the master server containing the information

necessary to update the slave to the prior version number before the slave server commits the packet of information.

20. A method for replicating data over a network including a master server and at least one slave server, the method comprising the steps of:

sending a packet of information from a master server to each slave server on the network, the information relating to a change in the data stored on the master server and containing a version number for the prior state and a version number for the new state of the data, the information further relating to previous changes in the data and a version number for each previous change;

allowing each slave server to determine whether the data on the slave server corresponds to the prior version number contained in the packet;

allowing each slave server to commit the packet of information if the data on the slave server corresponds to the prior version number contained in the packet, the commit also updating the version of the slave server to the new version number; and

allowing each slave server not corresponding to the prior version number to request that a delta be sent from the master server containing the information necessary to update the slave to the new version number.

21. A method for replicating data from a master server to at least one slave server over a network, the method comprising the steps of:

sending a packet of information from the master server to a slave server, the information relating to a change in the data stored on the master server and containing a version number for the present state of the data;

receiving the packet of information to a slave server;

allowing the slave server to determine whether the slave server has been updated to correspond to the version number contained in the packet, and to further determine whether the slave server can process the packet of information if needed to update to correspond to the version number contained in the packet;

sending a signal from the slave server to the master server, the signal indicating whether the slave server needs to be updated and whether the slave server can process the update; and

sending a response signal from the master server to the slave server indicating whether the slave server should commit to the information contained in the packet; and

committing the packet of information to the slave server if so indicated by the response signal.

38. A computer-readable medium, comprising:

(a) means for sending a packet of information from a master server to each slave server on the network, the information relating to a change in the data stored on the master server and containing a current version number for the present state of the data, the information further relating to previous changes in the data and a version number for each previous change;

(b) means for allowing each slave server to determine whether the slave server has been updated to correspond to the current version number;

(c) means for allowing each slave server to commit the information if the slave server has not missed a previous change; and

(d) means for allowing each slave server having missed a previous change to request that previous change be sent from the master server to the slave server before the slave server commits the packet of information.

39. A computer program product for execution by a server computer for replicating data over a network, comprising:

(a) computer code for sending a packet of information from a master server to each slave server on the network, the information relating to a change in the data stored on the master server and containing a current version number for the present state of the data, the information further relating to previous changes in the data and a version number for each previous change;

(b) computer code for allowing each slave server to determine whether the slave server has been updated to correspond to the current version number;

(c) computer code for allowing each slave server to commit the information if the slave server has not missed a previous change; and

(d) computer code for allowing each slave server having missed a previous change to request that previous change be sent from the master server to the slave server before the slave server commits the packet of information.

40. A system for replicating data over a network, comprising:

(a) means for sending a packet of information from a master server to each slave server on the network, the information relating to a change in the data stored on the master server and containing a current version number for the present state of the data, the information further relating to previous changes in the data and a version number for each previous change;

(b) means for allowing each slave server to determine whether the slave server has been updated to correspond to the current version number;

(c) means for allowing each slave server to commit the information if the slave server has not missed a previous change; and

(d) means for allowing each slave server having missed a previous change to request that previous change be sent from the master server to the slave server before the slave server commits the packet of information.

41. A computer system comprising:

a processor;

object code executed by said processor, said object code configured to:

(a) send a packet of information from a master server to each slave server on the network, the information relating to a change in the data stored on the master server and containing a current version number for the present state of the data, the information further relating to previous changes in the data and a version number for each previous change;

(b) allow each slave server to determine whether the slave server has been updated to correspond to the current version number;

(c) allow each slave server to commit the information if the slave server has not missed a previous change; and

(d) allow each slave server having missed a previous change to request that previous change be sent from the master server to the slave server before the slave server commits the packet of information.

These claims include allowing a slave server to commit the information if the slaver server has not missed a previous change and allowing the slave server that missed the previous change to request the previous change be sent to the master server to the slave server before the slave server commits the packet of information. Such a system is not shown or suggested in Gehani. Gehani does not suggest sending the update information before the comparison of the version vectors are done. For this reason claims 14, 19, 38, 39, 40 and 41 are believed to be allowable over Gehani. Claims 15-18 are dependent upon claim 14 Claims 22-30 are depended upon claim 21 and for that reason are believed to be allowable and for that reason and because of thed additional limitation of these claims are believed to be allowable.

Claims 31, 32, 33, 34 and 35 reads as follows:

31. A method for replicating data over a network, the method comprising the steps of:

(a) determining whether the replication should be accomplished in a one or two phase method;

(b) sending replication information determined to be accomplished in a one phase method by:

sending a packet of information from the master server to the slave server, the information relating to a change in the data stored on the master server and containing a version number for the present state of the data;

receiving the packet of information to a slave server;

allowing the slave server to determine whether the data on the slave server has been updated to correspond to the version number; and

requesting a delta be sent from the master server to the slave server if the slave server does not correspond to the version number, the delta containing information needed to update the slave server;

(c) sending replication information determined to be accomplished in a two phase method by:

sending a packet of information from the master server to the slave server, the information relating to a change in the data stored on the master server and containing a version number for the present state of the data;

allowing the slave server to determine whether the slave server has been updated to correspond to the version number, and to further determine whether the slave server can process the packet of information;

sending a signal from the slave server to the master server indicating whether the slave server needs to be updated and whether the slave server can process the packet of information;

sending a response signal from the master server to the slave server indicating whether the slave server should commit to the packet of information; and

committing the packet of information to the slave server if so indicated by the response signal.

32. A method for replicating data over a network, the method comprising the steps of:

(a) determining whether replication should be accomplished in a one or two phase method;

(b) sending data to be replicated in a one phase method by:

sending a version number for the current state of the data from a master server to a slave server;

requesting a delta be sent from the master server to the slave server if the data on the slave server does not correspond to the version number; and

(c) sending data to be replicated in a two phase method by:

sending a packet of information from the master server to a slave server;

determining whether the slave server can process the packet of information; and

committing the packet of information to the slave server if the slave server can process the packet of information.

33. A method for replicating data from a master to a plurality of slaves on a network, the method comprising the steps of:

(a) determining whether replication should be accomplished in a one or two phase method;

(b) sending data to be replicated in a one phase method by:

sending a version number for the current state of the data from the master to each slave; and

requesting a delta be sent from the master to each slave containing data that does not correspond to the version number;

(c) sending data to be replicated in a two phase method by:

sending a packet of information from the master to each slave; and

committing the packet of information to the slaves if each of the plurality of slaves can process the packet of information.

34. A method for replicating data from a master to a plurality of slaves on a network using one and two phase methods, the method comprising the steps of:

(a) sending data to be replicated in a one phase method by sending a version number for the current state of the data from the master to each slave so that each slave may request a delta to be sent from the master to the slave to update the data on the slave; and

(b) sending data to be replicated in a two phase method by sending a packet of information from the master to each slave, the packet of information to be committed by each slave if every slave is able to commit the packet of information.

35. A method for replicating data on a clustered network using one and two phase methods, each network cluster containing a cluster master and at least one cluster slave, the method comprising the steps of:

(a) sending data to be replicated in a one phase method by sending a version number for the current state of the data from a first cluster master to all other cluster masters so the other cluster masters may each request a delta; and

(b) sending data to be replicated in a two phase method by sending a packet of information from the first cluster master to each other cluster master, the packet of information to be committed by the other cluster masters if the other cluster masters are able to commit the packet of information.

These claims include both a one phase and two phase update method. Such as system is not shown, suggested or given a motivation for in Gehani and for this reason these claims are believed to be allowable. Claims 36-27 are dependent upon claim 35 and for that reason and because of additional limitations these claims, these claims are believed to be allowable.

In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested. The Examiner is respectfully requested to telephone the undersigned if they can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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By: _____

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